

## SWITZERLAND PROJECT MANAGEMENT MATURITY MODEL – HOW TO DEVELOP A PMMM TO ASSESS THE MATURITY IN PROJECT MANAGEMENT IN THE SWITZERLAND FIRMS – SWITZERLAND KEY STUDY

Antonio Bassi  
SUPSI, Switzerland  
antonio.bassi@supsi.ch

Hannimon Bianchi  
Agie Charmilles SA, Switzerland  
hbianchi@sunrise.ch

Marianna Della Croce  
Viseca Card Services SA, Switzerland  
m.dellacroce@bluewin.ch

Daiana Pirastu  
Equus Consulting SA, Switzerland  
daiana\_82@hotmail.com

Singh Pabla Inderbir  
Lombardi SA, Switzerland  
inderbir.pabla@lombardi.ch

### **Abstract:**

The scope of the study started in November 2015 is providing a general view of the Maturity in Project management of the Swiss enterprise. The method is based on the CMMI (Capability Maturity Model Integrated), developed by the SEI (Software Engineering Institute, Carnegie Mellon University) and the study made by Darci Prado and Russel Archibald in their "Maturidade em Gerenciamento de Projetos" (Project Management Maturity)", adapted by a pool of certified Project Managers, in their study "Modello di maturità per le PMI" to assess the maturity of the Switzerland SMEs. It was carried out an electronic form. The form was made in multilingual format in order to have a full coverage of Swiss territory and submitted in different productive sector where projects are made. The form has been optimised, keeping the question provided by the CMMI to reach a large number of partners and consequently obtain a higher number of answers. This study will provide a general overview of Swiss Maturity in project management divided in: speaking language region, type of Company and the maturity in relationship to the knowledge areas defined by the PMI (Project Management Institute). This study is the base for the institution of a Swiss Permanent Observatory to evaluate and to improve the capability in project management through a variety of tools and initiatives.

*Keywords: Maturity, Swiss territory, Regionalized, Company type, Project Management, CMMI, PMI*

## 1. INTRODUCTION

The success of an organization is measured through achievement of business goals and there is no doubt that the project management favors the completion of deliverables and the ability to predict. The awareness of the link between the evolution of organizations and their capacity to manage projects is increasingly widespread.

One way that organizations can use to assess their capabilities in project management is the analysis of organizational maturity, assessed on the basis of process. The literature offers different models more or less complex and efficient. Within the course, "Certificato di Studi Avanzati in Project Management Senior (CAS Senior PM)" offered by the institute SUPSI (Scuola Universitaria Superiore della Svizzera Italiana), a model we realized that provides guidance on the same plane as of other models, but also helps further identify areas of improvement.

SUPSI, within a research project started in the course "CAS Senior PM," would analyze project management capacity in Switzerland based and made on voluntary work from a small group of part time student, certificated project manager. This group participate at developing of the study even they conclude their study.

We study CMMI (Capability Maturity Model Integrated), developed by the SEI (Software Engineering Institute, Carnegie Mellon University), the study made by Darci Prado and Russel Archibald in their "Maturidade em Gerenciamento de Projetos (Project Management Maturity)" and the study made by Antonio Bassi with a group of Italian expert project manager defined in their "Maturità nei progetti. Un modello di miglioramento per le piccole e medie imprese".

In South of Switzerland we saw a growing of new and old company in various products and service areas. The company need to be very competitive and innovative due the Swiss Francs. For this reason they develop a large number of new projects that they are critical for the company itself. In any case the management of this type of project involve a good knowledge in project, program and portfolio management.

The advantage for the people that participate might draw is:

- Participate in research that has the aim of contributing to the dissemination of the culture of project management in Switzerland.
- Know his own maturity level, even the average level of maturity in Swiss companies, a result that will be achieved through this analysis.
- Know your own weak points on which it will be possible to intervene to improve effectiveness and efficiency in project management.
- Receive the final report of the research.

## 2. DEVELOPING OF THE STUDY

Adapted by a pool of certified Project Managers, in their study "Modello di maturità per le PMI" to assess the maturity of the Switzerland SMEs.

It was carried out an electronic form.

The form was made in multilingual format in order to have a full coverage of Swiss territory and submitted in different productive sector where projects are made.

The form has been optimised, keeping the question provided by the CMMI to reach a large number of partners and consequently obtain a higher number of answers.

This is the first time that someone made this type of study in the Italian part of Switzerland. To have a comparison we extend it at the German and the French part of Switzerland. This has involved the development of the study in the same three national languages.

### 2.1. Difference between model of Darci Prado and Maturidade

Here we like to describe the main difference between the question of the online evaluation of Darci Prado (DP) and our survey Maturidade.

The model of DP is made more for sectors of business with our model we have not made any distinction by sector. Prado is more PMBOK® oriented, as consequence, the company must know the specific terminology and methodology of PMI®. We made the analysis of every company in his totality. Maturidade is structured by Areas or Macro process so we obtain that all the questions are specifics. We try to applicate our model from small company (1-10 employs) to biggest Company (more of 1000 employs). We base the creation of our survey on the European contest and then we adapt it to the Swiss reality. Prado is more based on the South America contest.

## 2.2. Logistical problems

First of all was very important to decide the platform for sharing information due the impossibility to work all together, due to the distance and the different work schedules we could meet only rarely after evening classes. At the end we decide for Dropbox.

## 2.3. Deciding a platform for the form

We defined all the requirement and developed the WBS.

Once have all details of needing we analysed what the market offer as software for survey.

**Table 1:** Tool description

Name	Cost	Multilanguage	# of questions	# of response	# of surveys	Customize Logo	Report	Multilingual	Survey Templates	Storage	Accessibility
Google Forms	Free	Yes (Free)	255	200	no limit	yes	yes	yes	100+	yes (G. Docs)	not accessible by the Banks
Survio	Free / Paid	Yes (Free)	no limit	100 / mont hs	5	yes	yes, view only	yes	yes	no info	yes
Typeform	Free / Paid	no info	no limit	no limit	65	No, paid	yes, auto Analysis	yes	yes	no info	yes
Kwiksurveys	Free / Paid	Yes (Free)	no limit	no limit	no info	No	yes	no info	no info	SSL?!	yes
Eval and Go	Free / Paid	Yes (Paid)	no limit	150 / mont hs	no info	yes	yes, auto and Manual	Paid	yes	no info	yes
QuestionPro	Free / Paid	no	no info	100	no limit	yes	yes, very good	yes	yes	no info	yes
RationalSurvey	Free / Paid	Yes (Free)	100	1000	10	yes	yes	yes	No	no info	yes
SoGoSurvey	Free / Paid	Yes (Free)	no info	125 (Pro day)	no info	yes	yes	yes	yes	no info	yes
LimeSurvey	Free / Paid	Yes (Free)	db limit	no info	no limit	no info	yes	yes	add-on	no info	yes

**Table 2:** Evaluation Matrix

	Weight	Google Forms	Survio	Typeform	Kwiksurveys	Eval and Go	QuestionPro	RationalSurvey	SoGoSurvey	LimeSurvey
Cost	16	0	-1	0	-1	-1	-1	-1	-1	-1

Accessibility	15	0	1	1	1	1	1	1	1	1
# of surveys	15	0	-1	-1	0	0	0	-1	0	0
# of response	14	0	-1	0	0	-1	-1	0	-1	0
# of questions	13	0	0	0	0	0	0	-1	0	0
Customize Logo / Colors / etc..	12	0	0	0	0	0	0	0	0	0
Report	11	0	-1	1	0	0	0	0	0	0
Multilingual	10	0	0	0	0	-2	0	0	0	0
Survey Templates	9	0	0	0	0	0	0	0	0	0
Storage	8	0	0	0	0	0	0	1	0	0
Totals		0	-41	11	-1	-35	-15	-21	-15	-1

After the analysis we choose the following software TypeForm that meet fast our entire request.

## 2.4. Creating the question and distribute the form

We study CMMI (Capability Maturity Model Integrated), developed by the SEI (Software Engineering Institute, Carnegie Mellon University), the study made by Darci Prado and Russel Archibald in their "Maturidade em Gerenciamento de Projetos " (Project Management Maturity)" and the study made by Antonio Bassi "Maturità nella gestione progetti". We made some practical test with the three Type of models. We discover that the best model was "Maturità nei progetti".

The points in favour of this model are:

- Usable in various branch of activity
- Usable for different size of company

The model developed started from the structure of the PMI® in their PMBOK®, only for the structure and not for the terminology. The model was structured in 10 different knowledge areas and each knowledge areas was further divided in special interested points. These interested points are the evaluations points of our research and they were defined through the analysis of the main characteristics of the projects. The work started dividing the knowledge of the project in single parts through the method of the Work Breakdown Structure (WBS) to define the main activities of the projects, based on the general knowledges of the projects. After the definition of the main activities, the second phase of the research defined, through a deep analysis of the results, the activities that could characterize the knowledge in project management of the enterprise organization. These activities became the element of our survey.

Due to probable difficulties in understanding the terminology of the survey, we started with a third phase to understand the comprehension of the terms. Through the interviews of a sample of our interviewees we were able to define in a correct way all the items of our survey.

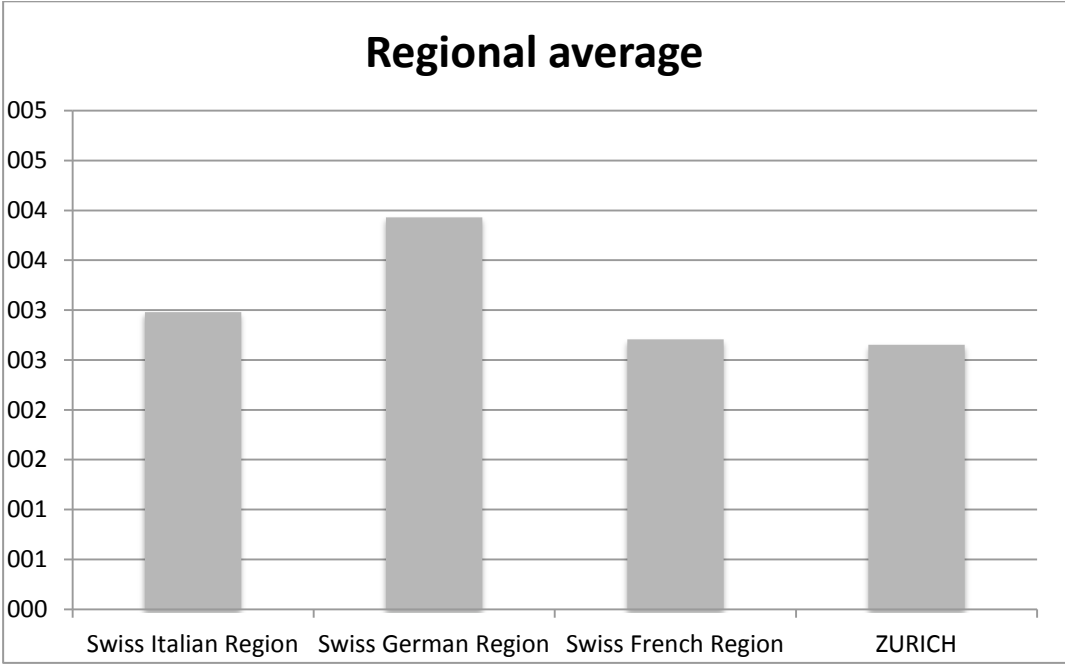
After the selection we start the works of translation and adaptation for the form. The target for this study was to involve people with responsibility or working on project. For this reason we can't use the formal project language. The translation was the most difficulties part to done because we must translate the question from formal English to speech German, France and Italian without exchange the meaning of the sentence. We choose to regroup the question in areas of knowledge so for the end users will be easier to fill the form in. We won't avoid the feeling of misunderstanding which could lead to failure to complete the survey.

After the creation we distribute the survey at our personal contact, contact of professional associations, Ex-student of SUPSI...

## 3. RESULTS

The team after the reception of feedback from companies which are involved in the surveys made an analysis. From this analysis we were obtained surprising results and unexpected. Here is showed an overview of the results.

The average of the Swiss maturity in project management with CMMI Method, coming out of the study was 2.99, in the worst case was 1 in the best was 5.

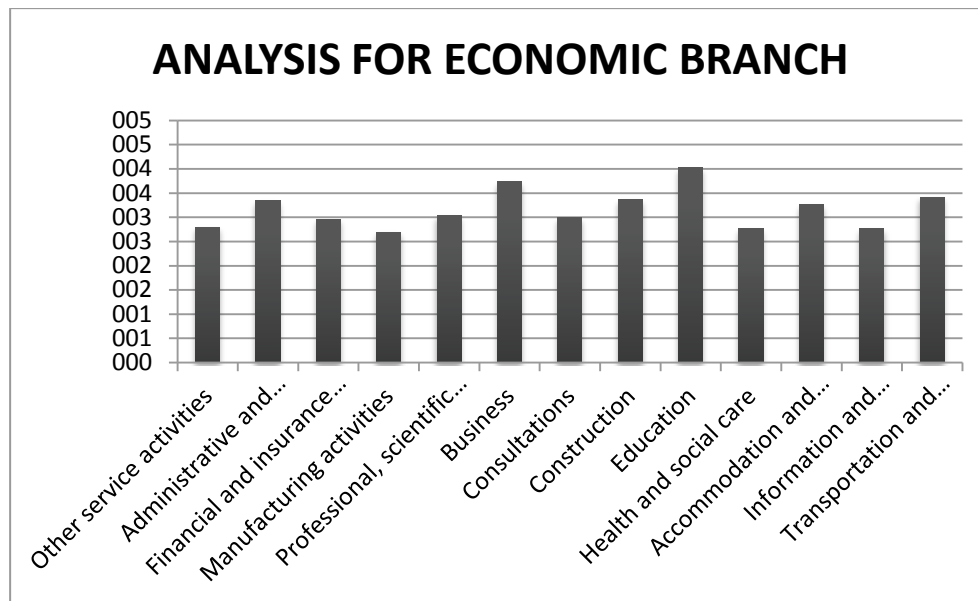


Big companies spend more resources than small, therefore they got higher ratings divided in business area, the worst were in the manufacturing areas. If the results are divided by region the results are shown that the Swiss German side is on the top chart, with the surprising of the Swiss economical centre of Zurich that was in the last position of charts.

If the analysis was made for macro areas of project management the worst was “define standard Process” with the average of 2.81, the best “Evaluates and acceptances of supplies” with the average score of 3.36. The best single area was: “Enter into the contract”.3.46 in contraposition of “determine policies and guidelines for customizing” 2.51.

In the context of maturity models, that could be quite similar to this analysis, through an online survey to a great number of enterprise organizations we have only the Darci Prado analysis defined only in the Brazilian context. The difference between the two model is this: the Darci Prado model defines only the overall maturity ranking of an organization, our model defines not only the overall maturity ranking but even the maturity ranking in knowledge area and subject groups. The overall values of the two analysis demonstrate that the values could be similar so the maturity in the two countries could be quite the same. But to confirm this analysis we need to redo the survey in the future for, almost, more than three times because the Darci Prado survey started more than 10 years ago is more consolidated than us.

The graphs below illustrate the distribution of maturity in economical areas. From the graph we can see that the area that produce virtual product is situated better but also the construction branch is situated in the high part of the chart.



## 4. CONCLUSION

The outcomes of the Surveys show that the Average (Level 3) of Swiss Maturity is good with the CMMI methods. The Swiss German side does not have a good level of maturity despite being common thought that they are very well structured and organized. The most important step for the increase of Companies maturity will be the courage from the enterprise to dedicate resource and instruct. We notice that the weaknesses of the company are in the follow Areas:

- Establish and describe the model of the lifecycle
- Establish criteria and guidelines for personalization
- Generation of testing schedule
- Update the Risk log
- Monitor the effects of performance of response plan
- Analyse the new risks arise
- Update the response plan to the risks

All these areas can be improved by following of training offered for example with Advanced studies done by university. Some of participants at the survey ask the resultants for increase the Maturity Level in their society.

This study will be the base for the institution of a Swiss Permanent Observatory to evaluate and improve the capability in project management through a variety of tools and initiatives. This survey will be done in the future from the Observatory, every 2 years.

## REFERENCE LIST

1. Bassi, (2011), Maturità nella gestione progetti, Franco Angeli S.r.l, Milano, Italia,
2. Bassi (2014), Knowledge management in project environment: the way to improve the value of the enterprise organization, IFKAD Conference
3. D. Prado, Enrico Mastrofini, Eugenio Rambaldi, (2010), Maturità nella gestione progetti, Ed Franco Angeli S.r.l, Milano, Italia,
4. IPMA (2006), "IPMA Competence Baseline 3.0", International Project Management Association
5. ISO (2003), ISO 10006 'Quality Management Systems – Guidelines for quality management in projects'
6. ISO (2009), ISO 31000 'Risk management — Principles and guidelines''
7. ISO (2012), ISO 21500 'Guidance on Project Management'
8. K. Blanchard (1997), Gung Ho! Turn On the People in Any Organization, Blanchard Family Partnership
9. M. B. Chrissis – M. Konrad – S. Shrum (2007), CMMI® Guidelines for Process Integration and Product Improvement, Addison Wesley,

